DOCUMENT RESUME

ED 222 902 CS 207 228

AUTHOR Phipps, Rita
TITLE Teaching English with Piaget and Bloom, from Developmental Writing to Literature.
PUB DATE Oct 82
NOTE 13p.; Paper presented at the Annual Meeting of the Pacific Northwest Regional Conference on English in the Two-Year College (Salem, OR, October 14-16, 1982).
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Developmental Stages; Educational Principles; Educational Theories; Elementary Secondary Education; *English Instruction; Higher Education; *Learning Processes; *Learning Theories; Literature Appreciation; *Teaching Methods; Writing Instruction
IDENTIFIERS *Piagetian Theory

ABSTRACT

If J. Piaget's six-step paradigm for the process by which all human learning occurs is used to guide teaching methodology, teachers would be able to help students learn in the most natural, authentic, and effective way. Four principles can help translate Piaget's theory into practice: (1) all learning proceeds along a definite causal sequence; (2) human beings learn by doing; (3) only the six-step process leads to true learning; and (4) the causal sequence is divided into two major stages, assimilation and accommodation. To transform these principles into practice, the teacher should decide what to teach first and in what order to present the rest. Then the instructor should devise tasks that will give students the opportunity to practice activities and thinking operations appropriate to each of the six steps. (Included are graphs of Piaget's theory and sample tasks from an introduction to fiction course.) (JL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED222902

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

TEACHING ENGLISH WITH PIAGET AND BLOOM, FROM DEVELOPMENTAL WRITING TO LITERATURE

Rita Phipps

Humanities Division
North Seattle Community College
9600 College Way N.
Seattle, WA 98103

206-634-4513

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Rita Phipps

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CS207228

Rita Phipps
Humanities Division
North Seattle Community College
9600 College Way N.
Seattle, WA 98103
(206) 634-4513

TEACHING ENGLISH WITH PIAGET AND BLOOM, FROM DEVELOPMENTAL WRITING TO LITERATURE

I. The key to a Piagetian method of teaching is in Piaget's theory of the process by which human beings learn. It is a process by which all human beings learn anything and everything; by this process infants first learn how to purposefully connect with reality (e.g., how to suck from the nipple) and adults learn abstract, complex concepts and skills (e.g., how to interpret metaphors). It is "a fundamental process of intellectual creation, which is found at all the levels of cognition, from those of earliest childhood to those culminating in the most remarkable of scientific invention" (Piaget, 1970, p. 78).

If we teachers could teach in light of this one fundamental human learning process, if we could learn how to use our knowledge of this process as a guide for our teaching methodology, we would be able to help our students learn in the most natural, authentic and effective possible way.

II. Piaget posits a 6-step paradigm for this process by which any and all human learning occurs. The first occurrence of this 6-step process or paradigm is when the infant learns its first methods for dealing with the world, e.g., the method for getting nourishment from a bottle (see fig. 1.B). Besides learning such specific methods for dealing with, "organizing," the world, the infant also experiences a continuing development over the first 18 months of its life (see fig. 1.A). Both the continuing 18-month development as well as the learning of all specific methods, skills or concepts occur by the same 6-step process or paradigm:

A.

1	2	3	4	5	6
Reflexive response to external events.	1st habits formed from repeated cycle of these events.	Means-end function is clearer; groping & correcting to achieve ends.	Purposeful use of habitual means to achieve ends more effectively & combining old means in new ways to get new ends.	Discovery of new means by random physical groping to achieve new ends or old ends more effectively.	Internal groping (thinking) to do same as in step 5.

(Piaget, 1969, pp. 6-12)

B.

Nipple is put in infant's mouth & it sucks.	Baby sucks nipple with ease after becoming familiar w/ activity.	Baby reaches out to hold bottle. Finally can succeed.	Baby can take bottle & put it in own mouth.	Baby can lie on side & drink; use 1 hand; find dropped bottle.	Baby looks, "thinks" & then slowly drops bottle on floor; cries for more.

FIGURE 1

The development of intelligence in general (as in fig. 1.A) and in particular (as in fig. 1.B) can be seen in figure 1. This same 6-step paradigm functions for the continuing development of the child from 18 months (Piaget cautions that all age designations are approximate) to the point at which abstract reasoning can begin (see fig. 2.B and 2.C; fig. 2.A is the same as fig. 1.A).

Then, though Piaget does not specify it, we must assume that this same 6-step paradigm or process also functions for the learning of any new skill, concept, convention or rule by adults, who are capable of abstract thinking (see fig. 2.D). Figure 2 uses the familiar four Piagetian developmental stages but coordinates them with our six steps, in accordance with Piaget's discussion in The Psychology of the Child (1969, p. 96).

A. SENSORY-MOTOR (ages 0-18 mos.)	B. PRE-OPERATIONAL (ages 18 mos.-6½)	C. CONCRETE OPERATIONAL (ages 6½-12)	D. FORMAL OPERATIONAL (ages 12-14+)
1 2 3 4 5 6	1 2 3	4 5 6	1 2 3 4 5 6
Infant is becoming able to use "sensory-motor intelligence." Having achieved this by c. 18 mos., child is ready to proceed, this intelligence as a given condition for all thinking that follows. Also, a "substructure" of concepts about reality and how to deal with ("organize") the world has also been assimilated, forming a basis for all future ideas. (Piaget, 1969, pp. 11-12, part 6; p. 13)	Child is now using its low level (sensory-motor) intelligence and has an assimilated repertoire of concepts and means for achieving ends("organizing the world"). Child must do 3-step assimilation of new concepts for learning any new skill or idea, as in A. // Child begins to develop mental representations (mental images & words) as intrinsic to learning process now. Groping & correcting intrinsic. (Piaget, 1969, p. 96)	Child practices & becomes more skilled at use of new concepts, skills. Child performs, gropes & corrects to perform and understand more effectively. Groping & correcting now is focusing more on accommodating the earlier, and self-centered, concepts to more of the world. (Child is decentering.) The child, however, as in A, is just "on the threshold of intelligence"; but here the next step will be that of abstract thought or high level intelligence. (Piaget, 1969, p. 10, end of part 4; pp. 92-96)	The young adult is now able to do abstract thinking, but only about those aspects of reality, skills, concepts for which s/he went through 6 steps (in B & C & analogous to the 6 steps in A). For all new matters to be learned, s/he must go through the 6 steps, seeking or making opportunities for going through all 6 steps, in sequence. This continues to be true for adults and all new matters they try to learn.

FIGURE 2

III. Now that we have in hand the Piagetian paradigm for the natural learning process of all human beings, we have a basis for developing our teaching methods and practices. We have a basis for creating a syllabus for the continuing development of our students' understanding through the entire quarter. And we have, by using the same paradigm,

a basis for creating lesson plans for assignment sequences for teaching each of the specific skills, concepts, rules and conventions that comprise the subject of the course.

We can also, with our understanding of this Piagetian paradigm, extrapolate a set of principles to aid us in translating the learning paradigm, the theory, into practice, that is, into a specific teaching approach and specific student assignments.

Principle 1: All learning of any new matter (unit, skill, concept, etc.) proceeds along a definite causal sequence, each new step presupposing and requiring the previous step. This sequence always starts, for each new matter to be learned, with simple, concrete material, and ends with creative use of the matter. Every new matter must be learned through this same sequence, for there is little or no transference of mastery from one matter to another. Some people, however, can learn some matters very quickly, with aptitide (Carroll, 1963). This means merely that they are able to move quickly through the process whereas others have to move carefully and thoroughly through the six steps. This, of course, can cause a frustrating dissonance for students who have an aptitude for or are experts in one matter or field (or competent in their lives in general) but without an aptitude for--or awkward, ignorant, confused novices in--a new matter or field. (Students are freed from this sense of dissonance when this natural phenomenon is explained to them.)

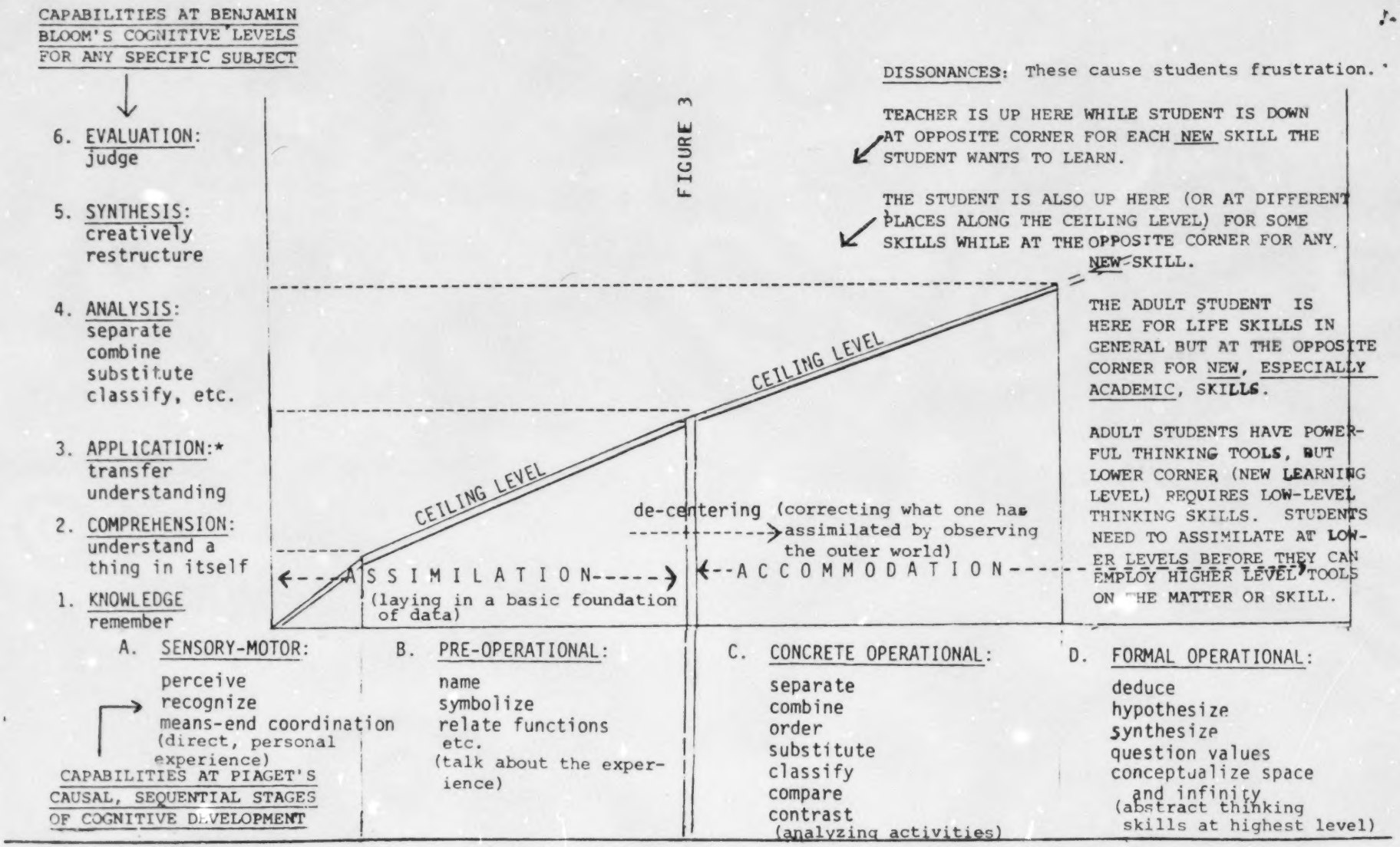
Principle 2: Human beings learn any new matter by doing, viz., by a) their own direct experience, b) talking about what they're doing; c) their own trial and error (groping and correcting), and, after a certain point in the sequence (at stage 4 and after), d) using the matter they're learning to achieve their own ends, to organize reality for their own purposes, practicing personal choice.

Principle 3: A person can truly, authentically learn only what s/he has learned by the above activities and by going through the 6-step process. Where a person has progressed to in the causal sequence (paradigm) for learning any new matter is that person's then ceiling level, and s/he can truly learn (internalize) no information beyond that level until and unless s/he proceeds to the next step by her/his own experiences, through the activities given above in Principle 2. Thus, when a teacher, who is her/himself at the top of the sequence or paradigm, at the stage of mastery, lectures or models or assigns readings in the text far beyond the students' ceiling level, it only wastes the teacher's breath and the students' time, and also creates a frustrating dissonance which is, surely, one of the major causes of attrition (see DISSONANCES in fig. 3 below).

It is true that some students may be interested in and entertained by lectures beyond their own ceiling level. But though they may be able to mimic and regurgitate what was said, they will not be able themselves to become creative masters of the matter except by learning it through practicing it, as discussed above.

By cross-referencing Piaget's recurring 6-step paradigm to Bloom's 6-level taxonomy (Bloom, 1956), we are able to fine-tune the Piagetian paradigm so that the ceiling level function is illuminated even further for our teaching purposes. Again, the ceiling level is a factor in both short-term learning of specific skills or concepts (from being uninitiated in the specific matter at the beginning of the unit to becoming able to do some degree of abstract thinking about the matter at the end of the unit), as well as in long-term development of understanding (from being uninitiated in the subject at the beginning of the course to becoming able to do some degree of abstract thinking about the subject at the end of the course).

FIGURE 3


CAPABILITIES AT BENJAMIN BLOOM'S COGNITIVE LEVELS FOR ANY SPECIFIC SUBJECT
6. EVALUATION: judge
5. SYNTHESIS: creatively restructure
4. ANALYSIS: separate combine substitute classify, etc.
3. APPLICATION:* transfer understanding
2. COMPREHENSION: understand a thing in itself
1. KNOWLEDGE remember
DISSONANCES: These cause students frustration.
TEACHER IS UP HERE WHILE STUDENT IS DOWN AT OPPOSITE CORNER FOR EACH NEW SKILL THE STUDENT WANTS TO LEARN.
THE STUDENT IS ALSO UP HERE (OR AT DIFFERENT PLACES ALONG THE CEILING LEVEL) FOR SOME SKILLS WHILE AT THE OPPOSITE CORNER FOR ANY NEW SKILL.
THE ADULT STUDENT IS HERE FOR LIFE SKILLS IN GENERAL BUT AT THE OPPOSITE CORNER FOR NEW, ESPECIALLY ACADEMIC, SKILLS.
ADULT STUDENTS HAVE POWERFUL THINKING TOOLS, BUT LOWER CORNER (NEW LEARNING LEVEL) REQUIRES LOW-LEVEL THINKING SKILLS. STUDENTS NEED TO ASSIMILATE AT LOWER LEVELS BEFORE THEY CAN EMPLOY HIGHER LEVEL TOOLS ON THE MATTER OR SKILL.
CEILING LEVEL
CEILING LEVEL
de-centering (correcting what one has assimilated by observing the outer world)
ASSIMILATION
(laying in a basic foundation of data)
ACCOMMODATION
A. SENSORY-MOTOR:
perceive
recognize
means-end coordination
(direct, personal experience)
B. PRE-OPERATIONAL:
name
symbolize
relate functions
etc.
(talk about the experience)
C. CONCRETE OPERATIONAL:
separate
combine
order
substitute
classify
compare
contrast
(analyzing activities)
D. FORMAL OPERATIONAL:
deduce
hypothesize
synthesize
question values
conceptualize space and infinity
(abstract thinking skills at highest level)
CAPABILITIES AT PIAGET'S CAUSAL, SEQUENTIAL STAGES OF COGNITIVE DEVELOPMENT

*Bloom, by describing application as the applying of abstract principles before analysis, misconstrues the process. His description is more appropriate for synthesis and perhaps even evaluation. A Piagetian description would have application as applying the matter on analogous material, to gain familiarity.

When adult students, with their high level thinking capacities and everyday use of these capacities on life situations and in fields or matters in which they are seasoned and expert, try to turn their powerful thinking apparatus upon the low level activities at the beginning of the process when learning something new, it is like a powerful truck with its giant wheels spinning to no avail in the mud. They have high level, abstract level questions; they are impelled to seek synthesis and to evaluate. Their well-used cognitive tools, however, are not appropriate for the steps at the beginning of the learning process. When apprised of the cause of their frustration, they are willing to put aside their desire for instant understanding and are willing to walk slowly and carefully through the six steps, doing only those tasks set to them by an instructor who knows which thinking skills and which activities are appropriate for the students to practice at each step, helping the students to move forward, step by step, pushing their ceiling level up, level by level.

Principle 4: The causal sequence or paradigm is divided into two major stages, whether the matter being learned is a simple skill or a complex concept or one simple part of a complex concept. Piaget calls the first stage assimilation; this is the requisite first stage in all learning, of any specific matter or in the overall cognitive development of a human being (see fig. 3). Its purpose, its activity, is the laying in of basic, raw, concrete data or information about the matter--through direct and repeated experience. (Piaget's theory centers on the development and function of "structures." However, this aspect of his theory is too complex to be fit into the limited scope of this paper. My use of "skills" and "concepts" is an attempt to adapt his vision of "structures" to the purpose of this paper.)

At this first stage, learners are incapable of high level abstract thinking about the matter being learned--their ceiling level prohibits it: this is a natural phenomenon. All the learner is authentically able to do in this first stage (steps 1, 2, 3) is store basic information by experiencing and gaining familiarity with the matter through activities which require the performance of the lower level thinking operations: perception, recognition, means-end coordination, self-aware repetition (application) of the matter on analogous materials (see fig. 3). Once this basic store of information and familiarity has been laid in--as the requisite foundation for further and higher level thinking about it--the learner is naturally impelled (cannot be stopped except at the peril of the learner's creativity) to move to the second stage: accommodation (see fig. 3). At this stage, the learner feels a need to grope and correct to find ways to use the matter more and more effectively to achieve her/his own ends. The learner's personal choice and sense of value of the matter must be involved here if authentic learning is to continue.

It is only at this stage that analysis can begin, for it is only now that the learner can take a deeper look at the now familiar matter and try to understand its inner dynamics and nature, how it works, how to use it with full understanding of all its parts and functions. Only after this activity has occurred in the causal sequence can authentic synthesis occur, i.e., the creative use of the now more thoroughly experienced, understood, digested, analyzed matter.

Only after the learner has begun to practice synthesizing can s/he begin to achieve mastery and become able to evaluate her/his own and other's use of the matter. But, again, this will be mastery only of the particular matter. For any new matter, the

whole process must begin at the beginning until mastery in it is achieved.

IV. Now, finally, with the paradigm and the principles in hand, we are ready to take them into the classroom. Briefly, the way to incorporate these four principles (and the paradigm which informs them) into one's teaching is, first, by determining the overall development through the course. Keeping the paradigm in mind, analyze the subject to discover what matters (units, skills, rules, concepts, conventions) should be taught first, as more basic, simple, concrete, and in what order the rest should be presented. (Remember, each matter will then have to be taught through its own 6-step sequence or process, by the paradigm.) The course must start at the assimilation stage and progress to the accommodation stage. (Likewise, each matter or unit must start its own sequence or paradigm at the assimilation stage and progress to the accommodation stage.) Later in the course, students can begin to synthesize the various matters to reach, by the end of the course, an understanding of the subject at a high level.

Second, the method of teaching will also incorporate the paradigm and principles:

A. The instructor must devise tasks which will give the students the opportunity to themselves practice activities and thinking operations appropriate to each of the 6 steps (see fig. 4).

B. Each task must be assigned in a 3-step sequence using only the first three steps of the paradigm (see fig. 4). This will emphasize the direct, personal experience aspect of learning and also the assimilation function (the need to lay in experience as a foundation for further, higher level thought), both of which are the sine qua non of any and all learning. As the students gain familiarity,and assimilate fundamental information, in the particular matter they are in the process of learning, they eventually become able to be more analytical, and then synthesizing, in their work.

The more one works with the paradigm, the more clear it becomes that it is like celestial music: it is everywhere, in unending, simultaneous counterpoint and harmony.

C. For whatever the teacher wants the students to learn, the teacher must provide opportunities for the students to do the learning themselves,and must always heed the students' ceiling level.

V. Now it is time to give a specific example from one of my own classes of teaching with the Piagetian paradigm. First, I have developed a Piagetian instructional sequence model which I use to plan not only the syllabus of the entire course (what unit comes first and which ones next and in what order) but also each individual lesson plan or assignment sequence for each unit, skill or concept to be learned (see fig. 4). This example is from my Introduction to Fiction course.

In this course I want my students to achieve mastery in the skill of character analysis as the first matter of the course. After experimenting for several quarters trying to analyze this skill into its paradigmatic steps, I developed a sequence for helping my students learn this matter, starting with assimilation activities.

FIGURE 4

This is a student-centered, discovery method of teaching.

TRANSLATING THEORY INTO CLASSROOM PRACTICE: TEACHERS PROVIDE OPPORTUNITIES FOR LEARNING

(1) Students do work individually, without directions, on new skill or convention or concept to be learned. Students' ceiling level is at lowest level and they must assimilate (lay in) basic foundation of information through direct, personal experience.

NOTE: Students cannot know more than they know. They come to know by, first, direct personal experience. They can mimic a teacher but do not really internalize, becoming capable of higher level, abstract thinking, unless and until they move through these Piagetian stages in this sequential, causal order.

The coordination of Piaget's stages with Bloom's taxonomy shows that unless and until a student has reached the proper place or point in the Piagetian sequence, s/he cannot perform at a Bloomian level higher than or beyond the ceiling level.

(2) Students discuss in small groups (3-4) the work they just did individually. Together they seek to discover rules or functions of that skill, concept or convention. Then whole class shares small group discussion and discoveries.

(3) Then repeat these first 3 activities with smilar tasks.

Students' ceiling level is rising. They must grope and correct through own experience.

Students are still assimilating (laying in) basic groundwork or foundation through direct, personal experience.

(4) Students now analyze how an expert does it (read text or instructor provides a model). Students recognize and identify in the expert's work what the students have done in their own work.

Students do this work as in the first stage: work individually, discuss in small groups, share in whole class.

Repeat cycle with different material. Teacher should evaluate work. Another cycle should be assigned with different material if students are far from mastery.

Students' ceiling level is rising. They are using habitual schemes and seeing and using new cominbations. They must grope and correct to increase their ceiling level. They are correcting their assimilated (laid in) store of knowledge/information with what is in the world (via accommodation).

(5) Students do work individually, as they did in the first step--only now they have internalized the skill or convention or concept and can perform the task with understanding and conscious control.

(6) Instructor evaluates and students may revise to further refine understanding and improve skill.

They grope and correct more purposefully and with more intelligence regarding the skill or concept or convention. Ceiling level is increasing.

Students' individual work must be on subject of own choice; they must work towards and for own purposes.

They are groping towards an equilibration (balance) between what is in the world (accommodated knowledge) and their own personal knowledge/experience (assimilated in first steps). This is having intelligence about this particular skill/rule.

A S S I M I L A T I O N

A C C O M M O D A T I O N

Task 1: Think of a person you know; recreate this person in words on paper so that another student, reading your words, will know what your person is like. (Students do this individually; then in small groups they share their character sketches; then I ask them, in their small groups, to list the methods they used to create their people on paper; finally, the whole class share their methods. If they have left out any important methods, I ad lib a task to give them the opportunity to experience that method. For example, when they do not use/discover dialogue as a method of character creation, I ask them, individually, to put their person in a situation with another person and then record what is said and done. They then share in small groups and finally as a whole class. From this they know--really know--that words on the page is where the characters are.)

There is an art to using the Piagetian small groups. In them, students do not directly teach each other. The function of this kind of small group is to give students an opportunity to talk. Every student will get a chance to share and talk; they will gain further familiarity by seeing the same matter from others' perspectives--learning occurs in and through talking. They talk; they learn. They teach themselves, at their own ceiling level, and peer differences in ceiling levels, which are usually not extreme enough to create disruptive dissonance, are stimulating. They discover, are active and in control of their own learning. Using small groups in this way requires that the teacher orchestrate their conduct, tasks and pace--orchestrate, not control. Unfortunately, the scope of this paper prohibits an adequate discussion of this challenging and creative aspect of Piagetian teaching. The same is true, also, of the use of whole class discusions.

Task 2: Read the assigned short story and identify the methods of character creation the author uses. (They do this individually, then share in small groups, then in whole class. Students can now see the author doing as they did and can see that an author's characters are, like theirs, in the words and scenes.)

Task 3: Now that you know where to find the characters, select lines in the story which tell/show what kind of person the protagonist is. Underline those parts you select. (Again, the same 3-step sequence is used: individual work; sharing in small groups; sharing in whole class. If students are confused, not fully familiar with the matter, I ad lib additional tasks to give them the opportunity to repeat the matter.) Now underline parts that tell/show you what kind of person character X is. (Again, the 3-step sequence. Students are now ready, eager, for accommodation.)

Task 4: Select any character of your own choice and, by underlining specific passages and lines, tell what kind of person s/he is. (Again, the 3-step sequence is used. Then they repeat the task with another character of their choice.)

They are now analyzing characters, albeit not at the highest level, but at the top of their own ceiling level and with full and satisfying understanding of what they are doing and how to do it. Their experience is that they are working hard, being challenged, have the tools and understanding to do the tasks, and are succeeding! Their analyses are being done with authentic, internalized understanding and competence. Their answers are rich and specific and produced through the use both of particular literary skills (textual analysis) and also of the general thinking skills of careful observation and inductive analysis. The learning--and use--of the higher level, abstract thinking skills of synthesis and evaluation comes later in the quarter as their general development progresses, as they study more stories, learn other skills and concepts, and do more character analyses.

A Task 5 would be an assignment (probably a test) which asks the students to write a character analysis, basing their views on quoted evidence from the stories. Task 6, then, would be the students' having the opportunity to rewrite their test after the teacher has evaluated it.

With this method of teaching/learning, students experience the pleasure of the gestalt effect at almost every step and with almost every task. The excitement, quality of discoveries (very often amazing and delighting the instructor with their originality and insightfulness), and authenticity of learning in this Piagetian approach are gratifying and refreshing to both teacher and students.

And what could be more of an antidote to a teacher's frustration and burn-out than to experience the combination of creatively re-examining one's subject; having a clear, objective, valid basis for deciding when and how to teach the various units, skills, concepts that comprise our subject; and seeing our students successfully learn?

Having gained confidence and courage from many experiments in all my classes for many quarters, I have now converted all my teaching into the method outlined in this paper, for all my courses from developmental writing to freshman composition to creative writing to literature. My students have never learned so well and enjoyed it so much; and I have never been as refreshed and felt as creative in my teaching as I do now, thanks to Piaget.

VI. Having shared this method and my experiences with you, I must say, now, that I can't really give you a full understanding just by telling you about it; as the theory dictates, you can learn how this method work s only by using it yourselves to carry out your own purposes in your own classrooms: trial and error (groping and correcting) and talking about what you're doing are needed for progressing through the stages, from inexperience with the method to gaining an understanding of how to use it to accomplish your own ends with your own students.

REFERENCES

Bloom, B.S., ed. Taxonomy of Educational Objectives: Handbook I, Cognitive Domain. New York: David McKay Company, 1956.

Carroll, John. "A Model of School Learning," Teachers College Record, 1963, 64: 723-733.

Inhelder, B. and J. Piaget. The Psychology of the Child. New York: Basic Books, Inc., 1969.

Piaget, J. Genetic Epistemology. New York: W.W.Norton, Inc., 1970.

FOR FURTHER INFORMATION

Phipps, R. "Teaching ENG 101 Along Natural Lines: A Curriculum Based on the Learning Theories of Piaget and Bloom," Structuring for Success in the English Classroom: Classroom Practices in Teach-in English, 1981-1982, National Council of Teachers of English, 1982.